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1 [miNI: reducing network interface memory requirements with dynamic handle](#)



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Reza Azimi, Angelos Bilas

June 2003 **ICS '03: Proceedings of the 17th annual international conference on Supercomputing**

Publisher: ACM


Full text available: [pdf\(289.75 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 20, Citation Count: 1

Recent work in low-latency, high-bandwidth communication systems has resulted in building user--level Network Interface Controllers (NICs) and communication abstractions that support direct access from the NIC to applications virtual memory to avoid ...


Keywords: parallel architectures, system area networks

2 Xen and the art of virtualization

 Paul Barham, Boris Dragovic, Keir Fraser, Steven Hand, Tim Harris, Alex Ho, Rolf Neugebauer, Ian Pratt, Andrew Warfield

December 2003 **ACM SIGOPS Operating Systems Review**, Volume 37 Issue 5

Publisher: ACM

Full text available:  pdf(168.76 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 251, Downloads (12 Months): 1674, Citation Count: 150

Numerous systems have been designed which use virtualization to subdivide the ample resources of a modern computer. Some require specialized hardware, or cannot support commodity operating systems. Some target 100% binary compatibility at the expense ...


Keywords: hypervisors, paravirtualization, virtual machine monitors

3 Xen and the art of virtualization

 Paul Barham, Boris Dragovic, Keir Fraser, Steven Hand, Tim Harris, Alex Ho, Rolf Neugebauer, Ian Pratt, Andrew Warfield

October 2003 **SOSP '03: Proceedings of the nineteenth ACM symposium on Operating systems principles**

Publisher: ACM

Full text available:  pdf(168.76 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 251, Downloads (12 Months): 1674, Citation Count: 150

Numerous systems have been designed which use virtualization to subdivide the ample resources of a modern computer. Some require specialized hardware, or cannot support commodity operating systems. Some target 100% binary compatibility at the expense ...

Keywords: hypervisors, paravirtualization, virtual machine monitors

4 Splitting interfaces: making trust between applications and operating systems configurable

Richard Ta-Min, Lionel Litty, David Lie

November 2006 **OSDI '06: Proceedings of the 7th symposium on Operating systems design and implementation**

Publisher: USENIX Association

Full text available:  pdf(387.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 68, Citation Count: 0

In current commodity systems, applications have no way of limiting their trust in the underlying operating system (OS), leaving them at the complete mercy of an attacker who gains control over the OS. In this work, we describe the design and implementation ...

5 Queue: Volume 6 Issue 1



January 2008

issue Volume 6 Issue 1

Publisher: ACM

Full text available: pdf(6.04 MB) digital
edition

Additional Information: [full citation](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 7, Citation Count: 0

6 Accelerating shared virtual memory via general-purpose network interface support



Angelos Bilas, Dongming Jiang, Jaswinder Pal Singh

February 2001 **ACM Transactions on Computer Systems (TOCS)**, Volume 19 Issue 1

Publisher: ACM

Full text available: pdf(178.88 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#),
[review](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 57, Citation Count: 0

Clusters of symmetric multiprocessors (SMPs) are important platforms for high-performance computing. With the success of hardware cache-coherent distributed shared memory (DSM), a lot of effort has also been made to support the coherent shared-address-space ...

Keywords: applications, clusters, shared virtual memory, system area networks

7 A system for simulation, emulation, and deployment of heterogeneous sensor networks



Lewis Girod, Thanos Stathopoulos, Nithya Ramanathan, Jeremy Elson, Deborah Estrin, Eric Osterweil, Tom Schoellhammer

November 2004 **SenSys '04: Proceedings of the 2nd international conference on Embedded networked sensor systems**

Publisher: ACM

Full text available: pdf(345.48 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#),
[index terms](#)

Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 176, Citation Count: 21

Recently deployed Wireless Sensor Network systems (WSNs) are increasingly following <i>heterogeneous</i> designs, incorporating a mixture of elements with widely varying capabilities. The development and deployment of WSNs rides heavily on the ...

Keywords: EmStar, TinyOS, real code simulation, sensor networks

8 Efficient remote block-level I/O over an RDMA-capable NIC



Manolis Marazakis, Konstantinos Xinidis, Vassilis Papaefstathiou, Angelos Bilas
June 2006 **ICS '06:** Proceedings of the 20th annual international conference on Supercomputing

Publisher: ACM

Full text available: pdf(320.04 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 67, Citation Count: 1

Modern storage systems are required to scale to large storage capacities and I/O throughput in a cost effective manner. For this reason, they are increasingly being built out of commodity components, mainly PCs equipped with large numbers of disks and ...

Keywords: block-level I/O, networked storage, performance evaluation, remote DMA

9 Communications of the ACM: Volume 51 Issue 8



August 2008 issue Volume 51 Issue 8

Publisher: ACM

Full text available: pdf(6.85 MB) digital edition

Additional Information: [full citation](#)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Citation Count: 0


10 Astrolabe: A robust and scalable technology for distributed system monitoring, management, and data mining



Robbert Van Renesse, Kenneth P. Birman, Werner Vogels

May 2003 **ACM Transactions on Computer Systems (TOCS)**, Volume 21 Issue 2

Publisher: ACM

Full text available:  pdf(341.62 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 53, Downloads (12 Months): 321, Citation Count: 39

Scalable management and self-organizational capabilities are emerging as central requirements for a generation of large-scale, highly dynamic, distributed applications. We have developed an entirely new distributed information management system called Astrolabe. ...

Keywords: Aggregation, epidemic protocols, failure detection, gossip, membership, publish-subscribe, scalability

11 WiFiProfiler: cooperative diagnosis in wireless LANs



Ranveer Chandra, Venkata N. Padmanabhan, Ming Zhang

June 2006 **MobiSys '06:** Proceedings of the 4th international conference on Mobile systems, applications and services

Publisher: ACM

Full text available:  pdf(404.12 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 18, Downloads (12 Months): 130, Citation Count: 1

While 802.11-based wireless hotspots are proliferating, users often have little recourse when the network does not work or performs poorly *for them*. They are left trying to manually debug the problem, which can be a frustrating and disruptive ...

Keywords: 802.11, fault diagnosis, peer-to-peer performance problems, wireless networks


12 Server I/O networks past, present, and future



Renato John Recio

August 2003 **NICELI '03:** Proceedings of the ACM SIGCOMM workshop on Network-I/O convergence: experience, lessons, implications

Publisher: ACM

Full text available:  pdf(225.62 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 30, Downloads (12 Months): 224, Citation Count: 0

Enterprise and technical customers place a diverse set of requirements on server I/O networks. In the past, no single network type has been able to satisfy all of these requirements. As a result several fabric types evolved and several interconnects ...

Keywords: 10 GigE, Cluster, Cluster Networks, Gigabit Ethernet, I/O Expansion Network, IOEN, InfiniBand, LAN, PCI, PCI Express, RDMA, RNIC, SAN, Socket Extensions, TOE, iONIC, iSCSI, iSER

13 Design and Implementation of Multiple Fault-Tolerant MPI over Myrinet (M³)

Hyungsoo Jung, Dongin Shin, Hyuck Han, Jai W. Kim, Heon Y. Yeom, Jongsuk Lee

November **SC '05: Proceedings of the 2005 ACM/IEEE conference on**

2005 Supercomputing

Publisher: IEEE Computer Society

Full text available:  pdf(485.87

KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 11, Downloads (12 Months): 63, Citation Count: 0

Advances in network technology and computing power have inspired the emergence of high-performance cluster computing systems. While cluster management and hardware highavailability tools are readily available, practical and easily deployable fault-tolerant ...

14 Fast and flexible application-level networking on exokernel systems



Gregory R. Ganger, Dawson R. Engler, M. Frans Kaashoek, Hector M. Briceño, Russell Hunt, Thomas Pinckney

February **ACM Transactions on Computer Systems (TOCS)**, Volume 20 Issue 1
2002

Publisher: ACM

Full text available:  pdf(500.67

KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#),
[index terms](#)

Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 78, Citation Count: 9

Application-level networking is a promising software organization for improving performance and functionality for important network services. The Xok/ExOS exokernel system includes application-level support for standard network services, while at ...

Keywords: Extensible systems, OS structure, fast servers, network services

15 Communications of the ACM: Volume 51 Issue 2



February issue Volume 51 Issue 2
2008

Publisher: ACM

Full text available: pdf(3.89 MB) digital
edition

Additional Information: [full citation](#)

Bibliometrics: Downloads (6 Weeks): 549, Downloads (12 Months): 1641, Citation Count: 0

16 Cryptography as an operating system service: A case study



Angelos D. Keromytis, Jason L. Wright, Theo De Raadt, Matthew Burnside
February **ACM Transactions on Computer Systems (TOCS)**, Volume 24 Issue 1
2006

Publisher: ACM

Full text available: pdf(669.12 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#),
[review](#)

Bibliometrics: Downloads (6 Weeks): 46, Downloads (12 Months): 999, Citation Count: 0

Cryptographic transformations are a fundamental building block in many security applications and protocols. To improve performance, several vendors market hardware accelerator cards. However, until now no operating system provided a mechanism that allowed ...

Keywords: Encryption, authentication, cryptographic protocols, digital signatures, hash functions

17 Nomad: migrating OS-bypass networks in virtual machines



Wei Huang, Jiuxing Liu, Matthew Koop, Bulent Abali, Dhabaleswar Panda
June **VEE '07: Proceedings of the 3rd international conference on Virtual execution**
2007 environments

Publisher: ACM

Full text available: pdf(335.04 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 28, Downloads (12 Months): 262, Citation Count: 0

Virtual machine (VM) technology is experiencing a resurgence due to various benefits including ease of management, security and resource consolidation. Live migration of virtual machines allows transparent movement of OS instances and hosted applications ...

Keywords: InfiniBand, high speed interconnects, migration, virtual machines, xen


18 Towards effective user-controlled scheduling for microkernel-based systems



Jan Stoess

July 2007 **ACM SIGOPS Operating Systems Review**, Volume 41 Issue 4

Publisher: ACM

Full text available:  pdf(606.45 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 20, Downloads (12 Months): 178, Citation Count: 0

With μ -kernel based systems becoming more and more prevalent, the demand for extensible resource management raises - and with it the demand for flexible thread scheduling. In this paper, we investigate the benefits and costs of a μ -kernel that ...

19 Automatic nonblocking communication for partitioned global address space programs



Wei-Yu Chen, Dan Bonachea, Costin Iancu, Katherine Yelick

June 2007 **ICS '07: Proceedings of the 21st annual international conference on Supercomputing**

Publisher: ACM

Full text available:  pdf(442.40 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 117, Citation Count: 0

Overlapping communication with computation is an important optimization on current cluster architectures; its importance is likely to increase as the doubling of processing power far outpaces any improvements in communication latency. PGAS languages ...

Keywords: PGAS, UPC, nonblocking

20 Tapping into the fountain of CPUs: on operating system support for programmable devices



Yaron Weinsberg, Danny Dolev, Tal Anker, Muli Ben-Yehuda, Pete Wyckoff

March 2008 **ASPLOS XIII: Proceedings of the 13th international conference on Architectural support for programming languages and operating systems**

Publisher: ACM

Full text available:  pdf(389.51 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 67, Downloads (12 Months): 186, Citation Count: 0

The constant race for faster and more powerful CPUs is drawing to a close. No longer is it feasible to significantly increase the speed of the CPU without paying a crushing penalty in power consumption and production costs. Instead of increasing single ...

Keywords: offloading, operating systems, programming model

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